

**REMARKS/ARGUMENT*****Status of the Claims***

Claims 1-28 stand rejected.

Claims 1, 10-13, 20-24, 26, and 27 are currently amended.

Claims 29-33 are new.

As such, claims 1-33 are currently pending in the application.

The Applicants hereby request further examination and reconsideration of the presently claimed application.

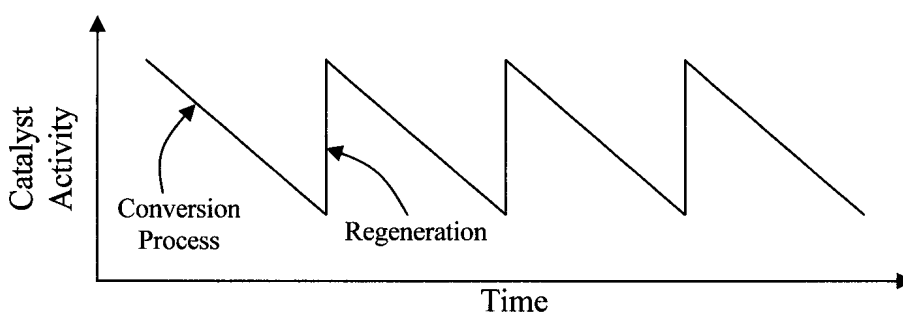
***Rejections under 35 U.S.C. § 102***

Claims 1-5, 8-13, 17-19, and 21-27 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,895,636 to *Nguyen et al.* (hereinafter *Nguyen*). Claims 2-5, 8-13, 17-19, and 21-23 depend on independent claim 1, and claim 25 depends on independent claim 24. Thus, claims 1-5, 8-13, 17-19, and 21-27 stand or fall on the application of *Nguyen* to independent claims 1, 24, 26, and 27. As stated by the Court of Appeals for the Federal Circuit (CAFC), “[a] claim is anticipated only if **each and every element** as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); *see also* MPEP § 2131. The Applicants respectfully submit that *Nguyen* does not anticipate claims 1-5, 8-13, 17-19, and 21-27 because *Nguyen* fails to set forth each and every element of claims 1-5, 8-13, 17-19, and 21-27.

**Overview of *Nguyen***

*Nguyen* teaches a catalytic waste gas conversion process. Specifically, *Nguyen* teaches a catalyst system that converts waste gases into comparatively innocuous compounds. *See Nguyen*,

col. 4, ll. 52-55. The process operates at about 100°C to about 650°C and deposits carbonaceous coke on the catalyst, which decreases the catalyst activity. *See Nguyen*, col. 8, ll. 60-65. The catalyst can be periodically regenerated at a temperate of at least about 600°C to remove the carbonaceous coke. *See Nguyen*, col. 10, l. 63 – col. 11, l. 2. *Nguyen* teaches that the catalyst activity is unaffected by the successive regeneration treatments. *See Nguyen*, col. 11, ll. 3-5. In other words, each of *Nguyen*'s regeneration cycles returns the catalyst its original activity level. Thus, a graph of *Nguyen*'s catalyst activity over time would be:



*Nguyen* does not anticipate claims 1-5, 8-13, 17-19, 21-23, and 26

*Nguyen* fails to anticipate claims 1-5, 8-13, 17-19, 21-23, and 26 because *Nguyen* fails to teach a process that produces at least one hazardous substance. Amended claims 1 and 26 read:

1. A method comprising:
  - operating a process using a catalytic reactor system comprising a catalyst, **whereby the process produces at least one hazardous substance;**
  - discontinuing operation of the process; and
  - abating the at least one hazardous substance from the catalytic reactor system while preserving activity of the catalyst contained therein.
26. A method comprising:
  - operating a process using a catalytic reactor system comprising a catalyst, **whereby the process produces at least one hazardous substance;**
  - discontinuing operation of the process;
  - abating the at least one hazardous substance from the catalytic reactor system such that a fouling rate of the catalyst is substantially the same before and after the abating; and
  - restarting operation of the process using the catalyst.

As shown above, amended claims 1 and 26 recite the limitation of a process that produces at least one hazardous substance. In contrast, *Nguyen*'s process produces "innocuous compounds." See *Nguyen*, col. 4, ll. 52-55. Innocuous compounds may be defined as compounds that do not produce any injury. *Merriam-Webster Dictionary*, Online Version (2008).<sup>1</sup> Thus, *Nguyen*'s process does not produce any hazardous substances. As such, *Nguyen* fails to teach each and every limitation of claims 1 and 26, and consequently claims 1-5, 8-13, 17-19, 21-23, and 26 should be allowed over *Nguyen*.

*Nguyen* does not anticipate claims 24 and 25

In addition, *Nguyen* fails to anticipate claims 24 and 25 because *Nguyen* fails to teach an oxidation process that requires at least about 50% less time than a complete regenerative oxidation of the catalyst reactor system. Amended claim 24 reads:

24. A method comprising:  
oxidizing a catalytic reactor system at a temperature of from about 350° F to about 500° F to abate at least one hazardous substance from the catalytic reactor system,  
**wherein a time required to perform the oxidation is at least about 50% less than a time required for complete regenerative oxidation of the catalytic reactor system.**

As shown above, amended claim 24 recites the limitation of an oxidation process that requires at least about 50% less time than a complete regenerative oxidation of the catalyst reactor system. In contrast, *Nguyen* is silent as to the time required to perform his conversion step, his regeneration step, or any relation between the two. As such, *Nguyen* fails to teach each and every limitation of claim 24, and consequently claims 24 and 25 should be allowed over *Nguyen*.

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<sup>1</sup> The Merriam-Webster Dictionary is available online at <http://www.merriam-webster.com/>.

Nguyen does not anticipate claims 27 and 28

Finally, *Nguyen* fails to anticipate claims 27 and 28 because *Nguyen* fails to teach controlling the oxidation in response to a monitoring such that an activity of a catalyst contained therein as measured by T-eq after the oxidizing is within about 20°F of the catalyst activity before the oxidizing. Amended claim 27 reads:

27. A method comprising:  
oxidizing a catalytic reactor system at a temperature of from about 350° F to about 500 °F;  
monitoring abatement of at least one hazardous substance within the catalytic reactor system; and  
**controlling the oxidation in response to the monitoring such that an activity of a catalyst contained therein as measured by T-eq after the oxidizing is within about 20°F of the catalyst activity before the oxidizing** and the at least one hazardous substance is oxidized to a safe exposure level.

As shown above, amended claim 27 recites the limitation of controlling the oxidation in response to a monitoring such that an activity of a catalyst contained therein as measured by T-eq after the oxidizing is within about 20°F of the catalyst activity before the oxidizing. In contrast, *Nguyen* is silent as to the extent of catalyst activity during his conversion reaction. The Examiner attempts to overcome such a deficiency by contending that *Nguyen's* regeneration process teaches constant catalyst activity. See Office Action of April 2, 2008, p. 3. However, such an interpretation is the polar opposite of the definition of regeneration. Specifically, IUPAC defines “regeneration” as “reversal of activity deactivation with restoration of the original catalytic activity.” IUPAC Compendium of Chemical Terminology, Electronic Version (2008).<sup>2</sup> Thus, by definition *Nguyen* changes the activity of his catalyst when he regenerates it. In fact, *Nguyen* teaches that his catalyst is restored back to its original activity. See *Nguyen*, col. 11, lines 3-5. **Changing the activity of the catalyst back to its original activity is not the same as limiting the change in catalyst**

**activity as measured by T-eq to 20°F.** Nor does *Nguyen* teach **controlling the oxidation** in response to **monitoring** to achieve the desired activity. Thus, *Nguyen* does not teach controlling an oxidation in response to a monitoring such that an activity of a catalyst contained therein as measured by T-eq after the oxidizing is within about 20°F of the catalyst activity before the oxidizing. As such, *Nguyen* fails to teach each and every limitation of claim 27, and consequently claims 27 and 28 should be allowed over *Nguyen*.

### ***Rejections under 35 U.S.C. § 103***

Claims 6-7, 14-16, 20, and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Nguyen*. It is well established that dependent claims that depend from allowable independent claims are also allowable. Claims 6-7, 14-16, and 20 depend on claim 1, and claim 28 depends on claim 27. Claims 1 and 27 are allowable over *Nguyen* for the reasons given above. Thus, claims 6-7, 14-16, 20, and 28 are allowable over *Nguyen* as well.

### ***Consideration of Claim Limitations***

In considering the patentability of the claims, the Examiner must consider all of the claimed limitations. The Examiner contends: “Regarding claims 14-16, apparatus limitations are not given undue weight in process claims.” Office Action of April 2, 2008, p. 4. Thus, Examiner’s position regarding claims 14-16 is that apparatus limitations should not be given patentable weight in a process claim. Such a position is contrary to Federal Circuit precedent and the MPEP. Specifically, the MPEP states:

**All** words in a claim must be considered in judging the patentability of that claim against the prior art. MPEP § 2143.03 citing *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494,496 (CCPA 1970) (Emphasis ours).

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<sup>2</sup> The IUPAC Compendium of Chemical Terminology is available online at <http://goldbook.iupac.org/index.html>.

[A] claimed invention may be a combination of devices that appear to be directed to **a machine and one or more steps of the functions performed by the machine.** **Such instances of mixed attributes,** although potentially confusing as to which category of patentable subject matter the claim belongs, **does not affect the analysis to be performed by USPTO personnel.** See, e.g., *R.A.C.C. Indus. v. Stun-Tech, Inc.*, 178 F.3d 1309 (Fed. Cir. 1998) (unpublished). MPEP § 2106.IV.B (Emphasis ours).

As shown above, the CAFC and the MPEP require the Examiner to consider and give patentable weight to all limitations of a claim. As explained above, the Examiner has refused to do so. Consequently, the Examiner's failure to examine claims 14-16 is contrary to CAFC precedent, and therefore grounds for reversal of his rejection.

### ***New Claims***

New claims 29-33 recite novel and nonobvious aspects of the invention not disclosed by *Nguyen*. Specifically, the cited prior art fails to teach or render obvious reducing system pressure to thereby evolve any remaining hazardous substances as recited in claim 29. The prior art does not teach or render obvious regenerating the catalyst subsequent to abating as in claim 30. Similarly, the cited prior art does not teach or render obvious removal of hydrocarbons from the system subsequent to discontinuing the process and prior to abating a hazardous substance as recited in claim 31. The cited prior also does not teach or render obvious an oxygen concentration in the system during abating from about .0005 mol% to about 5 mol% as in claim 32. Nor does the prior art teach or render obvious restarting the process using the catalyst as in claim 33. Support for these new claims is found in paragraphs 26-29, 33, and 35 of the application. New claims 29-33 depend from independent claim 1, which is allowable over *Nguyen* for the reasons given above. Thus, new claims 29-33 are allowable over *Nguyen*.

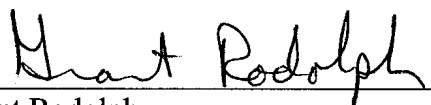
**CONCLUSION**

Consideration of the foregoing amendments and remarks, reconsideration of the application, and withdrawal of the rejections and objections is respectfully requested by the Applicants. No new matter is introduced by way of the amendment. It is believed that each ground of rejection raised in the Office Action dated April 2, 2008 has been fully addressed. If any fee is due as a result of the filing of this paper, please appropriately charge such fee to Deposit Account Number 50-1515 of Conley Rose, P.C., Texas. If a petition for extension of time is necessary in order for this paper to be deemed timely filed, please consider this a petition therefore.

If a telephone conference would facilitate the resolution of any issue or expedite the prosecution of the application, the Examiner is invited to telephone the undersigned at the telephone number given below.

Respectfully submitted,  
CONLEY ROSE, P.C.

Date: 7/31/08

  
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